

1 CLAIMS

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3 What is claimed is:

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5 1. A data processing system having recording means
6 for recording relationships between objects where recording
7 is done using object identifiers which are uniform in layout
8 across all object types and furthermore where identifiers
9 include the object type descriptor and an object number.

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11 2. The data processing system of Claim 1, wherein the
12 object number of the object identifier is a system-key
13 (SYSKEY), relative row number or other such row address
14 which allows for direct access to the object data.

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16 3. The data processing system of Claim 1, wherein
17 objects can be recorded only after a definition has been
18 entered allowing for the object type to exist.

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20 4. The data processing system of Claim 3, wherein new
21 object types can be entered by a user based on supplied
22 object classes at any time during the life of the system and
23 does not require programmatic changes or recompilation.

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25 5. The data processing system of Claim 4, where
26 Object Classes provided are based on common entities used in
27 commercial applications.

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29 6. The data processing system of Claim 1, wherein
30 relationships between objects can be recorded only after a
31 definition has been entered allowing for the relationship
32 type to exist between the two or more object types.

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34 7. The data processing system of Claim 6, wherein new
35 allowed relationship definitions can be entered by a user at
36 any time during the life of the system and does not require
37 programmatic changes or recompilation.

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1 8. The data processing system of Claim 1, which
2 allows for inquiries to be formulated to follow existing
3 relationships from one entity type to another within the set
4 of defined allowed relationships, and for execution of such
5 inquiries.

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7 9. The data processing system of Claim 8, which
8 allows individual inquiries to have their own access
9 security independent of other inquiries and be attached to
10 separate menus.

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12 10. A database system in which entities are stored in
13 a finite set of relative tables (one for each object class),
14 relationships are stored in a finite set of tables, and the
15 meaningful interpretation of these two sets of tables is
16 provided by schema definitions stored in another finite set
17 of tables (RelDef and EntDef).

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19 11. A machine-implemented database system comprising:
20 (a) entity recording means for recording data
21 representative at least of a first entity instance
22 belonging to a first entity class and a second entity
23 instance which belongs either to the first entity class
24 or a second entity class;
25 (b) relation recording means, logically linked to
26 the entity recording means, for recording first data
27 identifying the first entity instance, second data
28 which is opposed to the first data and identifies the
29 second entity instance and third data which is opposed
30 to the first and second data and identifies one or more
31 distinct relations which link the first entity instance
32 to the second entity instance; and
33 (c) relation reporting means, operatively coupled
34 to the relation recording means, for examining data
35 recorded in the relation recording means according to a
36 search algorithm based on one or two of the first
37 through third data, for identifying the opposed two or
38 one of the first through third data and for reporting

1 the identity of said opposed two or one

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3 12. The system of Claim 11 wherein the entity
4 recording means comprises:

5 (a.1) a plurality of Entity-instances (Ei) tables
6 each for recording data representative of entity
7 instances which belong to an entity class associated
8 with that Ei table; and

9 (a.2) an Entity-class defining table for
10 recording entity-class data representative of distinct
11 entity classes and opposed to such entity-class data,
12 EiT data identifying one Ei table where all instances
13 of the corresponding entity-class are recorded.

14

15 13. The system of Claim 12 wherein the relation
16 recording means comprises:

17 (b.1) a plurality of Relation-instances (Ri)
18 tables each of recording data representative of the
19 distinct relations between the first and second entity
20 instances and for associating each of the relations
21 with a distinct relationship class; and

22 (b.2) a Relation-class defining table for
23 recording relation-class data representative of each
24 relation-class data representative of each relation
25 class and opposed to such relation class data, RiT data
26 indentifying one Ri table where all instances of the
27 corresponding relation-class are recorded.

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29 14. A method for defining in a computerized database
30 system, relations between entities, the method comprising:

31 recording first data defining a first entity
32 class;

33 recording second data defining a second entity
34 class;

35 recording third data defining a first group of
36 entity instances belonging to the first entity class;

37 recording fourth data defining a second group of
38 entity instances belonging to the second entity class;

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~~and~~

recording fifth data expressly defining a
relationship instance and connecting said relationship
instant to an instance of the first entity class and to
an instance of the second entity class.

Add B2